Kunal Kapila

Bachelor of Science, Mathematics and Scientific Computing
Double Major, Computer Science and Engineering

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Education

- **Indian Institute of Technology, Kanpur** *2014 - 2019 (Expected)*
  Cumulative Grade Point Average 9/10
- **All India Senior School Certificate Examination (AISSCE)**
  Central Board of Secondary Education (CBSE), Govt. of India; Delhi Public School, R. K. Puram
  - 98.2% (School Topper) with National top 1% in Computer Science & Chemistry *2014*
  - Cumulative Grade Point Average (CGPA) 10/10 *2012*

Academic and Co-Curricular Achievements

- Secured AIR 116 in **JEE Mains** 2014 & AIR 1306 in **JEE Advanced** 2014 amongst 1.5 million candidates
- Secured Rank 29 & 54 in **ACM-ICPC Amritapuri** Onsite & Online Round 2015 respectively amongst 1500 teams
- **Microsoft Code.Fun.Do**
  - **Winner 2014-15**: Graphing app to plot implicit 2D Mathematical Functions for Windows Phone Platform
  - **National 5th, Coding Milestone, Finalist Forum 2014-15**: Educational app for Windows Phone Platform
  - **Winner 2015-16**: Front-end for open source program simulation code for Microsoft Windows Store
- Qualified for & attended **International Olympiad of Informatics Training Camp** 2014
- Qualified for **Indian National Mathematics Olympiad** 2013
- **Kishore Vaigyanik Protsahan Yojna** Fellow 2013, Department of Science & Technology, Government of India
- **National Talent Search Examination** Scholar 2010, conducted by NCERT, Government of India

Work Experience & Projects

- Development Intern, **IITK NYC Office** *MAY - JUL 2016*
  Supervisor: Prof. Manindra Agrawal, Department of CSE, IIT Kanpur
  - Worked on the backend of a distributed web application
  - Refactored the core code base to make managing code easier including the database schema
- **Randomness Certification using Quantum Non-Locality** *FEB - APR 2016*
  Supervisor: Prof. Rajat Mittal, Department of CSE, IIT Kanpur   Click here for project Report
  - Understood Bell inequalities, EPR Paradox and studied classical and quantum strategies for non local games for the CHSH game
  - Studied how non local correlations of quantum states can be used to generate certified randomness
- **Cimulator**: a Visual & Interactive Tutoring system   *Click here for **Tutorial***   *MAY - JUL 2015*
  Supervisor: Prof. Amey Karkare, Department of CSE, IIT Kanpur   *Tested by 400 students in Fall* 2015
  - Interpreter for C language in python, modelled memory artificially, handled external header files & overflows
  - Prompts user with possible corrections for runtime errors instead of crashing abruptly (unlike gcc)
  - Web interface to **simulate C codes** that were interpreted by Cimulator to provide visual cues to the user
- **Elementary Number Theory**: KVPY Summer Project *MAY - JUN 2015*
  Supervisor: Prof. A. K. Lal, (Department Head) Department of Mathematics and Statistics, IIT Kanpur
  - Primes, Congruences, Quadratic Reciprocity and Number Theoretic Functions from "An Introduction to Theory of Numbers" by Niven, Zuckerman, & Herbert
  - C++ implementations of functions like GCD & modular inverse, and analysed their time complexity

Relevant Courses Undertaken   (A*) Awarded for exceptional performance

- **Mathematics**: Real Analysis, Complex Analysis, Introduction to Fourier Series, Several Variable Calculus, Abstract Algebra, Probability & Statistics, Mathematical Logic, Modal Logic
- **Computer Science**: Fundamentals of Computing (A*), Data Structures and Algorithms (A*), Algorithms II, Modern Cryptology, Quantum Computing, Principles of Database Systems, Introduction to Computer Graphics
- **Others**: Introduction to Economics (A*), Introduction to Philosophical Logic

Positions of Responsibility

- **Coordinator, Programming Club**, Science and Technology Council, IIT Kanpur *MAR 2016 - current*
  - Conducted several lecture series, workshops & competitions for students of the campus community
  - Organised the summer camp and mentored over 60 students who completed projects in various fields
- **Head Web, Antaragni**, Students' Gymkhana, IIT Kanpur *MAR 2016 - current*
  - Conceptualised and designed the website for Antaragni 2016 (*http://antaragni.in/*)
  - Implemented server using MEAN stack along with *ejs* for templating & *passport* for facebook authentication